

Name: _____
GTA: _____
Date: _____

LABORATORY UNIT 3 WORKSHEET [20 pts]

1. Make a drawing of yeast cells illustrating the process of budding. [1 pt.]
2. List the similarities and differences between fungi and protists. How do both of these kingdoms differ from the ~~kingdom~~ Eubacteria? [2 pts.]
domain
3. Contrast the cellular organization of a moss and fern stem, relating structure to function in both plants. [2 pts.]
Mnium, Pteridium

Date: _____

4. In the space below, compare the support and other major tissues of monocot and dicot stems by drawing the key features you observed. Include a detailed drawing of one vascular bundle from each. Label the epidermis, vascular bundle, xylem, phloem, and the sclerenchyma of the rind and bundle sheath. [6 pts]

- 40

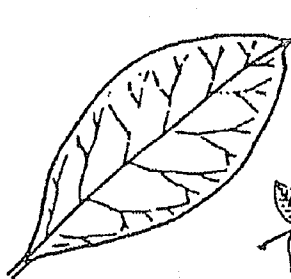
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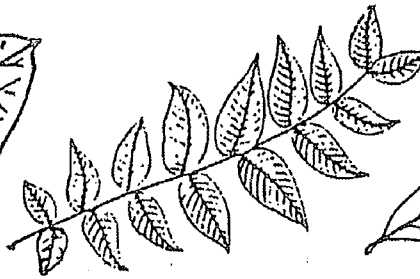
PRACTICAL PLANT CLASSIFICATION

The process of identifying an organism can be accomplished using a **dichotomous key**. A dichotomous key consists of a series of two alternative characteristics, called **couplets**, which are compared to the traits of the unknown subject. Use of a key involves movement through a series of couplets, selecting one of the alternatives that best fit the characteristics of the object under study at each point along the way. Use the following dichotomous key to identify the four trees in the set given to you by your teaching assistant. (Write your identifications in the appropriate space at the bottom of this sheet.)

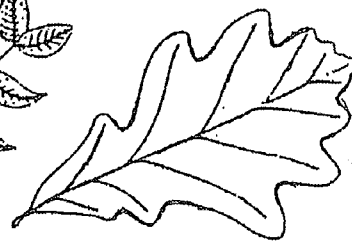
1. Leaves needle-like 2
 Leaves broad and flat 4
2. Leaves solitary Norway spruce, *Picea abies*
 Leaves in clusters of 2 or more leaves 3
3. Leaves in clusters of 2, <7 cm long short-leaf pine, *Pinus echinata*
 Leaves in cluster of 3–5, >7 cm long white pine, *Pinus strobus*
4. Leaves simple (i.e., one leaf arises from main stem) 5
 Leaves compound (i.e., composed of several leaflets) 6
5. Edge of leaf with several deep lobes 7
 Edge of leaf without deep lobes basswood, *Tilia americana*
6. Fewer than eleven leaflets shagbark hickory, *Carya ovata*
 Eleven or more leaflets black walnut, *Juglans nigra*
7. Lobes rounded white oak, *Quercus alba*
 Lobes pointed red maple, *Acer rubrum*



simple leaf



compound leaf



leaf with deep lobes

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6. Identify the four tree species in your set [4 pts]:

Which set did you examine? (Write the number for credit): _____

14
order!

Genus	Species	Common name
a) _____	_____	_____
b) _____	_____	_____
c) _____	_____	_____
d) _____	_____	_____

7. Using common sense, explain why leaves are used in the key to identify the plants instead of flowers. [1pt]

8. Coconut palms have heavy fruits, as you saw today. Yet palms are found naturally on many remote tropical islands, often hundreds of miles from other islands and the mainland, far out in the Pacific or Indian Ocean. How did coconuts get there in the first place, long before a human visited this speck of land in a vast ocean? [1 pt]